UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,644	05/04/2001	Eric J. Horvitz	MS150906.1	1557

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EXAMINER
WONG, LESLIE

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.		Applicant(s)	
Office Action Summary		09/849,644	●	HORVITZ ET AL.	
		Examiner		**Art Unit**	
		Leslie Wong		2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _29 January 2004r_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-29_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Receipt of Applicant's Amendment, filed 29 January 2004, is acknowledged.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1,2, 6-10, 13-15, 18-22, 25, and 26-29 are rejected under 35

U.S.C. 102(e) as being anticipated by **Beyda et al.** (U.S. Patent 6,148,294).

Regarding claims 1 and 25, **Beyda et al.** teaches a system, method, computer-

readable medium for predicting a target file directory, comprising:

a).   a component which analyzes probabilities and utilities associated with

determining potential target directories for storing and accessing data (col. 1, line

66 – col. 2, line 8).

Regarding claims 2 and 28, **Beyda et al.** further teaches a component for

building a subset of the potential target directories that are predicted to be the target

directory (col. 6, line 60 – col. 7, line 4; col. 7, lines 17-26).

Regarding claims 6, 18, and 29, **Beyda et al.** further teaches wherein the

potential target directories are determined from at least one of a local computer system

and a remote computer system (col. 7, lines 27-32).

Regarding claims 7 and 19, **Beyda et al.** further teaches wherein the

probabilities are a function of recent and long-term file activity within a directory (col. 7,

lines 53-62).

Regarding claims 8 and 20, **Beyda et al.** further teaches wherein the long term

file activity is determined from a predetermined time horizon (col. 5, lines 12-29).

Regarding claims 9 and 21, **Beyda et al.** further teaches wherein the recent file

activity is determined from frequency of access to a file (col. 6, line 60 – col. 7, line 4).

Regarding claims 10 and 22, **Beyda et al.** further teaches a background monitor

to determine tile access frequency (col. 7, lines 17-26).

Regarding claims 13-15 26, and 27, **Beyda et al.** further teaches a method for

determining a potential target node for directory operations, comprising:

a).   assigning probabilities and utilities to a plurality of potential target nodes

(col. 5, lines 12-42; col. 2, lines 9-18);

b).   determining an expected utility from the probabilities and utilities

associated with the plurality of target nodes (col. 5, line 12 – col. 6, line 22); and

c).   displaying a candidate list of likely nodes to a user based upon the

expected utility (col. 8, lines 14-16; col. 1, line 66 – col. 2, line 8).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 3,4, 5, 16, and 17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Beyda et al.** (U.S. Patent 6,148,294) as applied to claims 1,2, 6-10,

13-15 18-22, 25, and 26-29 above, and further in view of **Ishizaki et al.** (U.S. Patent

5,752,217 B1).

Regarding claims 3 and 16, **Beyda et al.** does not explicitly teach a step wherein

the utilities are functions of navigation costs associated with traversing from a displayed

node from the directory to at least one of the potential target directories.

Ishizaki et al., however, teaches a step wherein the route costs are computed

based on link information and connection information and a destination route is set

based on a connection of links which has the least route cost (col. 2, lines 18-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement the navigation costs associated with traversing from a displayed node from the directory to at least one of the potential target directories as doing so would improve the use of system resource and therefore increase system efficiency and minimize the costs of navigation (col. 1, lines 26-34).

Regarding claim 4, **Beyda et al.** does not explicitly teach a step wherein expected utilities of candidate nodes to display from a directory structure are computed as functions of probabilities of target information being at a node, and the navigation costs associated with traversing from the node to at least one of the potential target directories.

Ishizaki et al., however, teaches a step wherein expected utilities of candidate nodes to display from a directory structure are computed as functions of probabilities of target information being at a node, and the navigation costs associated with traversing from the node to at least one of the potential target directories (col. 2, lines 18-36).

Regarding claims 5 and 17, **Beyda et al.** does not explicitly teach a step wherein the navigation costs are assigned by at least one of user selections and encoded (i.e., assign) within the system.

Ishizaki et al., however, teaches a step wherein select and compute a node to update route costs (claim 12 and col. 2, lines 18-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to assign and store the navigation costs as this would enable later retrieval of information.

6.   Claims 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Beyda et al.** (U.S. Patent 6,148,294) as applied to claims 1,2, 6-10, 13-15, 18-22, 25, and 26-29 above, and further in view of **Candan et al.** (U.S. Patent 6,549,896).

Regarding claims 11 and 23, **Beyda et al.** does not explicitly teach a list scan penalty for reducing probabilities associated with scanning lists within a directory.

Candan et al., however, teaches computing the probability that the random walk process will transition to each of the other web page by the assigned penalty value (col. 9, lines 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the feature of assigning a penalty associated with scanning a directory as this technique is widely use to calculate the navigation cost.

Regarding claims 12 and 24, **Beyda et al.** does not explicitly teach wherein the list scan penalty is determined as an exponential function that decreases as the number of elements on the list increases.

Candan et al., however, teaches determining list scan penalty as an exponential function (col. 10, lines 12-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to allow determining list scan penalty as an exponential function as this technique is widely use to calculate the navigation cost.

Response to Argument

7.   Applicant's arguments filed 29 January 2004 have been fully considered but they are not persuasive.

Applicants argue that Beyda et al. does not teach or suggest each and every element of the claimed invention. Additionally, Applicants argue that Beyda et al. does not teach or suggest assigning probabilities and utilities or determining an *expected utility from the probabilities and utilities.*

In response to the preceding arguments, Examiner respectfully submits that the limitation of claim 1 recites: **"a component which analyzes probabilities and utilities associated with determining potential target directories for storing and accessing data".** Beyda et al. teaches analyzing a user's patterns of access or use (i.e., utilities) by tracking directories and files are accessed most frequently (col. 1, line 66 – col. 2, line 3). Further, Beyda et al. teaches that the user can also assign a predetermined weighting to any or all of the various parameters or files or applications, thereby

weighting the outcome of the determination of which file is most likely to be accessed next (col. 2, lines 30-34). Additionally, Beyda et al. teaches if the user decides to access a file, the file access system presents the user with its determination of the most likely directory to be accessed based on the respective application in use, and a most frequently used algorithm (i.e., assigning probabilities and utilities). Examiner submits that the fact Beyda et al. can present to the user the directory or file most likely to be accessed indicates that Beyda utilizes the probability algorithm to calculate the expected probabilities and utilities for the target directories or files. Thus, the above cited text portions disclose a system that analyzes probabilities and utilities associated with determining potential target directories for storing and accessing data as claimed.

Further Applicants argue that Beyda et al. does not teach or suggest a component that *analyzes utilities relating to navigating amongs nodes.*

In response to the preceding arguments, Examiner respectfully submits that Beyda et al. teaches *analyzes utilities relating to navigating amongs nodes as* identifying which of the server's drives within a local area network are accessed most often to provide default access to the corresponding drive (col. 3, lines 33-61).

Further, Applicants argue that Beyda et al. and Ishizaki et al., individually or in combination, do not teach or suggest each and every element the subject claims.

In response to the preceding arguments, Examiner respectfully submits that

Beyda et al. teaches a computer directory updating and presentation based on

frequency of access. The prior art analyzes a user's patterns of access or use and

present to users most likely directory to be accessed based on the respective

application in use and a most frequently used algorithm (col. 1, line 66 – col. 2, line 18).

Although, Beyda et al. analyzes probabilities and utilities associated with determining

potential target directories or nodes, or files; the prior art does not explicitly teach

navigation costs associated with traversing from a source directory to a target directory.

Ishizaki et al., teaches a nagivation system having optimal destination route setting

capability wherein the route costs are computed based on link information and

connection information and a destination route is set based on a connection of links

which has the least route cost (col. 2, lines 18-36). Combining Ishizaki et al. with Beyda

et al. would have provided Beyda's system the capability to determine the navigation

cost between the directories in order to minimize the costs of navigation as suggest by

Ishizaki et al. at col. 1, lines 26-34. Thus, combining the references would have arrived

at the limitation as claimed.

Further, Applicants argue that Beyda et al and Candan et al., individually or in

combination, do not teach or suggest each and every element the subject claims.

In response to the preceding arguments, Examiner respectfully submits that

teaches a computer directory updating and presentation based on frequency of access.

The prior art analyzes a user's patterns of access or use and present to users most likely directory to be accessed based on the respective application in use and a most frequently used algorithm (col. 1, line 66 – col. 2, line 18). Beyda et al. does not explicitly teach a list scan penalty for reducing probabilities associated with scanning lists within a directory. Candan et al., however, teaches computing the probability that the random walk process will transition to each of the other web page by the assigned penalty value (col. 9, lines 9-16). As specified in Applicants' specification page 12, line 10-18. The Specification indicates that an exponential function may be selected as a penalty function, where N is an integer and represents the number of files in the list. In the example tree structure depicted by the tree structure 80, no scan penalty is assigned to node (k) 91, since this node would appear by itself, without any nodes on the (k) level, in a list of nodes. Nodes (j) on the other hand, are each associated with three items at the (j) sublevel. Likewise, nodes (m) are each associated with three times at the (j) sublevel and thus assigned a list scan penalty. Candan et al. teaches a web page contains a fewer number of links a lower penalty, because the random walk process is likely to spend the most time at those web pages. Conversely, those web pages that connect the seed pages in a higher number of links are assigned a higher penalty (col. 9, lines 1-16). Examiner submits that Candan et al. teaches the penalty function according with Applicants' definition of penalty functions. Therefore, combining Candan et al. with Beyda et al. would have provided Beyda's system the capability to assign the penalty values according with the number of items in a node or directory together with assigning the utilities and probabilities for the target directory. Thus,

combining Candan et al. with Beyda et al. would have arrived at the limitation as

claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Leslie Wong whose telephone number is (703) 305-

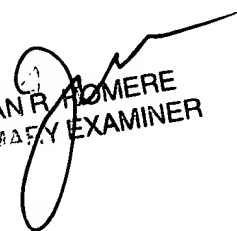3018. The examiner can normally be reached on Monday to Friday 9:30am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E Breene can be reached on (703) 305-9790. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Leslie Wong
Patent Examiner
Art Unit 2177

LW
02 April 2, 2004

JEAN R. HOMERE
PRIMARY EXAMINER